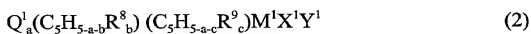


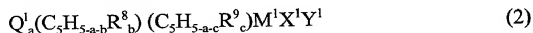
represent a coordination-bonding ligand; X^1 , Y^1 , Z^1 , W^1 and U^1 each represent a covalent-bonding or ionic-bonding ligand; and L^1 , L^2 , X^1 , Y^1 , Z^1 , W^1 and U^1 may be bonded to each other to form a cyclic structure.

32. (New) The catalyst as claimed in claim 5 for copolymerization of olefins and styrenes, wherein the transition metal compound (A) is represented by any of the following general formulae (2) to (6):



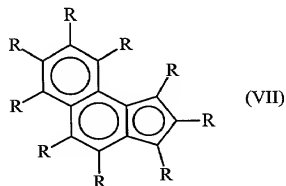
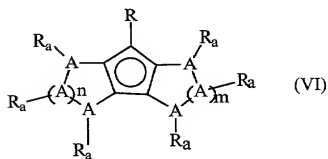
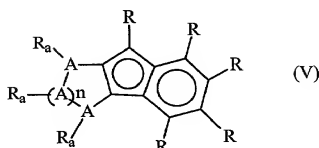
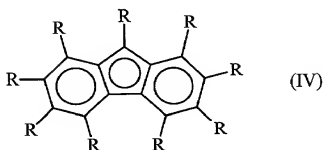
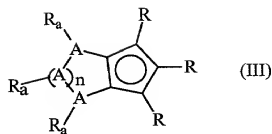
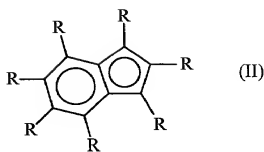
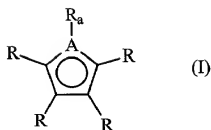
in which Q^1 represents a bonding group that crosslinks the two conjugated five-membered cyclic ligands $(C_5H_{5-a-b}R^8_b)$ and $(C_5H_{5-a-c}R^9_c)$; Q^2 represents a bonding group that crosslinks the conjugated five-membered cyclic ligand $(C_5H_{5-a-d}R^{10}_d)$ and the group Z^1 ; R^8 , R^9 , R^{10} and R^{11} each represent a hydrocarbon group, a halogen atom, an alkoxy group, a silicon-containing hydrocarbon group, a phosphorus-containing hydrocarbon group, a nitrogen-containing hydrocarbon group, or a boron-containing hydrocarbon group; and a plurality of these groups, if any, may be the same or different, and may be bonded to each other to form a cyclic structure; a represents 0, 1 or 2; b, c and d each represent an integer of from 0 to 5 when a = 0, or an integer of from 0 to 4 when a = 1, or an integer of from 0 to 3 when a = 2; e is an integer of from 0 to 5; M^1 represents a transition metal of Groups 4 to 6 of the Periodic Table; M^2 represents a transition metal of Groups 8 to 10 of the Periodic Table; L^1 and L^2 each represent a coordination-bonding ligand; X^1 , Y^1 , Z^1 , W^1 and U^1 each represent a covalent-bonding or ionic-bonding ligand; and L^1 , L^2 , X^1 , Y^1 , Z^1 , W^1 and U^1 may be bonded to each other to form a cyclic structure.

33. (New) The catalyst as claimed in claim 6 for copolymerization of olefins and styrenes, wherein the transition metal compound (A) is represented by any of the following general formulae (2) to (6):



in which Q^1 represents a bonding group that crosslinks the two conjugated five-membered cyclic ligands $(C_5H_{5-a-b}R^8_b)$ and $(C_5H_{5-a-c}R^9_c)$; Q^2 represents a bonding group that crosslinks the conjugated five-membered cyclic ligand $(C_5H_{5-a-d}R^{10}_d)$ and the group Z^1 ; R^8 , R^9 , R^{10} and R^{11} each represent a hydrocarbon group, a halogen atom, an alkoxy group, a silicon-containing hydrocarbon group, a phosphorus-containing hydrocarbon group, a nitrogen-containing hydrocarbon group, or a boron-containing hydrocarbon group; and a plurality of these groups, if any, may be the same or different, and may be bonded to each other to form a cyclic structure; a represents 0, 1 or 2; b, c and d each represent an integer of from 0 to 5 when a = 0, or an integer of from 0 to 4 when a = 1, or an integer of from 0 to 3 when a = 2; e is an integer of from 0 to 5; M^1 represents a transition metal of Groups 4 to 6 of the Periodic Table; M^2 represents a transition metal of Groups 8 to 10 of the Periodic Table; L^1 and L^2 each represent a coordination-bonding ligand; X^1 , Y^1 , Z^1 , W^1 and U^1 each represent a covalent-bonding or ionic-bonding ligand; and L^1 , L^2 , X^1 , Y^1 , Z^1 , W^1 and U^1 may be bonded to each other to form a cyclic structure.

34. (New) The catalyst as claimed in claim 2 for copolymerization of olefins and styrenes, wherein, in the transition metal compound (A) of formula (4), the group $(C_5H_{5-e}R^{11}_e)$ is represented by any of the following general formulae (I) to (VII):



wherein A represents an element of Group 13, 14, 15 or 16, and plural A's may be the same or different; R represents a hydrogen atom, a halogen atom, an aliphatic hydrocarbon group having from 1 to 30 carbon atoms, an aromatic hydrocarbon group having from 6 to 30 carbon atoms, an alkoxy group having from 1 to 30 carbon atoms, an aryloxy group having from 6 to 30 carbon atoms, a thioalkoxy group having from 1 to 30 carbon atoms, a thioaryloxy group having from 6 to 30 carbon atoms, an amino group, an amido group, a carboxyl group, or an alkylsilyl or alkylsilylalkyl group having from 3 to 30 carbon atoms, and R's may be the same or different, and may be optionally bonded to each other to form a cyclic structure; a represents 0, 1 or 2; and n and m each represent an integer of at least 1.